

19 by sputtering. In a nitrogen gas atmosphere, thermal treatment is performed for 30 seconds at 500 °C.

A⁴ As a result of reaction between the wiring 3 and the cobalt film, a cobalt silicide film 25 is formed. The cobalt film which did not react with the wiring 3 and the titan nitride film are removed in a wet process using a mixture including sulfuric acid and hydrogen peroxide.

IN THE CLAIMS:

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Please **CANCEL** claim 3 without prejudice or disclaimer.

Please **AMEND** the claims as follows:

SUB B1
A⁵

- 1 1. (Amended) A method for manufacturing a semiconductor device, comprising the steps of:
 - 2 forming a wiring comprising silicon on a surface of a semiconductor substrate;
 - 3 covering part of the wiring with a resist pattern;
 - 4 implanting ions into the wiring using the resist pattern as a mask;
 - 5 removing the resist pattern;
 - 6 thinning the wiring by removing a surface layer of the wiring to a depth of at least 5 nm; and
 - 7 forming a metal silicide film on a surface of the wiring by causing reaction between a surface layer
 - 8 of the thinned wiring and a refractory metal which reacts with silicon to form silicide,
 - 9 wherein the wiring thinning step comprises the steps of:
 - 10 oxidizing the wiring, using a rapid thermal processing apparatus, beginning on an upper
 - 11 surface thereof down to a predetermined depth; and
 - 12 removing an oxidized section of the wiring oxidized in the oxidizing step.
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- 1 ^{SUB} 27 5. (Amended) A method for manufacturing a semiconductor device, comprising the steps of:
- 2 ^{A6} forming wiring comprising silicon on a surface of a semiconductor substrate;
- 3 covering part of the wiring with a resist pattern;
- 4 implanting ions into the wiring using the resist pattern as a mask;
- 5 removing the resist pattern;
- 6 oxidizing the wiring, using a rapid thermal processing apparatus, beginning on an upper surface
- 7 thereof down to a predetermined depth;
- 8 removing an oxidized section of the wiring oxidized in the oxidizing step and thereby thinning the
- 9 wiring; and
- 10 forming a metal silicide film on a surface of the wiring by causing reaction between a surface section
- 11 of the thinned wiring and a refractory metal which reacts with silicon to form silicide.

Please **ADD** the following new claim 9:

- ^{A7} 9. (New) A method of manufacturing a semiconductor device according to claim 1, wherein in the step of oxidizing the wiring, the oxidation is conducted in an atmosphere including an oxygen gas and a hydrogen gas.